

Mouse anti-TLR9, clone 5G5 (Monoclonal)

Clone no. 5G5

MONOSAN

Product name	Mouse anti-TLR9, clone 5G5 (Monoclonal)
Host	Mouse
Applications	IHC-fr,FC,IF,IHC-P,WB
Species reactivity	human, canine, mouse
Conjugate	-
Immunogen	Unknown or proprietary to MONOSAN and/or its suppliers
Isotype	IgG2a
Clonality	Monoclonal
Clone number	5G5
Size	1 ml
Concentration	100 ug/ ml
Format	-
Storage buffer	PBS with 0.1% BSA and 0.02% sodium azide
Storage until expiry date	2-8°C

FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC PROCEDURES

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Additional info

The monoclonal antibody 5G5 recognizes human Toll-like receptor 9. Toll-like receptors (TLRs) are highly conserved from *Drosophila* to humans and share structural and functional similarities. TLRs constitute a family of pattern recognition receptors (PRRs) that mediate cellular responses to a large variety of pathogens (viruses, bacteria, and parasites) by specific recognition of so-called "pathogen-associated molecular patterns" (PAMPs). Activation of TLRs, a family of at least 11 different members that function either as homo- or heterodimers, leads to activation of NF- κ B-dependent and IFN regulatory factor-dependent signaling pathways. TLRs have a central role in innate immunity and are also required for the development of an adaptive immune response. TLRs are expressed by various cells of the immune system, such as macrophages and dendritic cells. They recognize and respond to molecules derived from bacterial, viral and fungal pathogens. Whereas most TLRs are expressed on the cell surface, TLR9 is expressed intracellularly within one or more endosomal compartments and recognizes nucleic acids. TLR9 detects a rather subtle difference in the DNA of vertebrates compared with that of pathogens. Vertebrate genomic DNAs have mostly methylated CpG dinucleotides where bacterial and viral DNAs have unmethylated CpG dinucleotides. TLR9 undergoes relocation from endoplasmic reticulum to CpG-ODN-containing endosomes. In these endosomes TLR9 becomes a functional receptor after proteolytic cleavage. TLR9 exists as a preformed homodimer and CpG-ODN binding promotes its conformational change, bringing the cytoplasmic TIR-like domains close to each other. This allows a recruitment of the key adapter protein MyD88 which initiates a signalling cascade. The only human immune cell types known to constitutively express TLR9 and to be activated by CpG ODN are pDCs and B cells. TLR9 triggering induces an activation phenotype in the B cells and pDCs, characterized by the expression of costimulatory molecules, resistance to apoptosis, and induces Th1-type immune response profiles.

References

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2. Rutz, M et al Eur J Immunol 2004, 34: 2541
3. Rumio C et al. Am J Pathol 2004; 165:373
4. Pratesi G et al. Cancer res 2005; 65: 6388
5. Tokumasa N et al. Blood 2007; 110: 553

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